

April 1, 1897.

The LORD LISTER, F.R.C.S., D.C.L., President, in the Chair.

A List of the Presents received was laid on the table, and thanks ordered for them.

Professor Johannes Wislicenus was balloted for and elected a Foreign Member of the Society.

The CROONIAN LECTURE, "The Mammalian Spinal Cord as an Organ of Reflex Action," was delivered by Dr. C. S. SHERRINGTON, F.R.S.

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CROONIAN LECTURE.—"The Mammalian Spinal Cord as an Organ of Reflex Action." By C. S. SHERRINGTON, M.A., M.D., F.R.S., Holt Professor of Physiology, University College, Liverpool.

(Abstract.)

The channels of connection between spinal nerve-centres.

Long spinal reflex paths and short spinal reflex paths.

The First Law of Pflüger: examples of it and exceptions to it; relation between it and microscopical features of the cord.

The Second Law of Pflüger: examples of it and exceptions to it; the crossed knee jerk.

The Third Law of Pflüger: examples of it and exceptions to it.

The Fourth Law of Pflüger: examples of it and exceptions to it; influence of semisection upon the conductions.

The contradistinction drawn between spinal reflexes and cortical reactions.

The interpretation of purposive character of spinal reflexes.

Relation of the reflexes to progression.

The solidarity of the isolated spinal cord as a "reflex" organ.

Some characters of spinal reflex movements.

Changes induced in reflex actions by shifting the site of transection from upper bulbar to infra bulbar situations.

The correlation augmentations with inhibitions.

Influence of the afferent spinal root on willed movements, on cortical reactions, on tonus, on rigor mortis, on knee jerk. Areal induction (simultaneous contrast) as a spinal phenomenon. Influence of afferent roots on spasm, on spinal reflexes.

Is the efficiency of the afferent root as an excitor of reflexes influenced by distal severance of it?

Double conduction in the central nervous system; information as to the connections of the long ascending fibres of the dorsal columns.

The locus of incidence of areal induction in the synapse.

A particular case in regard to the relation between afferent and efferent neurons is offered by the eye-muscles. The source of tonus of the eye-muscles.

The importance of afferent roots to muscular activity. The distinction between anaesthesia and apæsthesia.

The question of the independent excitability of the motor neuron.

*April 8, 1897.*

The LORD LISTER, F.R.C.S., D.C.L., President, in the Chair.

A List of the Presents received was laid on the table, and thanks ordered for them.

The following Papers were read :—

I. "The Production of X Rays of different Penetrative Values."

By A. A. C. SWINTON. Communicated by LORD KELVIN, F.R.S.

II. "Photographic Spectra of Stars to the  $3\frac{1}{2}$  Magnitude." By F. McCLEAN, F.R.S.

III. "Condensation of Water Vapour in the Presence of Dust-free Air and other Gases." By C. T. R. WILSON, B.Sc. (Vic.), M.A. (Cantab.), of Sydney Sussex College, Clerk-Maxwell Student in the University of Cambridge. Communicated by Professor J. J. THOMSON, F.R.S.

IV. "Double (Antidrome) Conduction in the Central Nervous System." By C. S. SHERRINGTON, M.A., M.D., F.R.S., Holt Professor of Physiology, University College, Liverpool.

V. "Further Note on the Sensory Nerves of Muscles." By C. S. SHERRINGTON, M.A., M.D., F.R.S., Holt Professor of Physiology in University College, Liverpool.

VI. "On the Breaking-up of Fat in the Alimentary Canal under Normal Circumstances and in the Absence of the Pancreas." By VAUGHAN HARLEY, M.D., M.R.C.P., Professor of Pathological Chemistry, University College, London. Communicated by Professor HORSLEY, F.R.S.